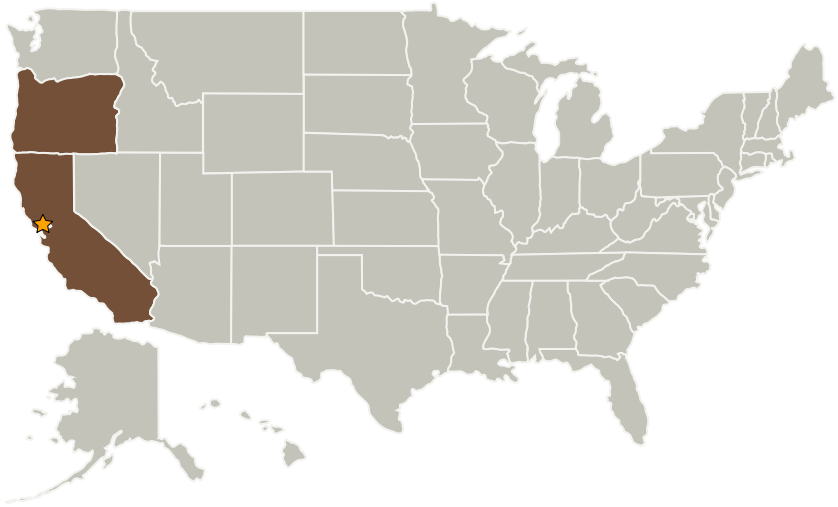
Catalytic Decomposition of Gaseous Byproducts from Heat Melt Waste Compaction, Phase II

Completed Technology Project (2005 - 2007)

Project Introduction

Several solid waste management systems currently under development result in the production of gas-phase organic contaminants which, due to the periodic and unpredictable nature of solid wastes and contaminants produced by these systems, cannot be treated by the Trace Contaminant Control System. Two examples of these are the Heat Melt Compaction System under development at NASA - Ames Research Center and the Microwave Powered Solid Waste Stabilization and Water Recovery System under development at UMPQUA Research Company (URC). During the Phase I effort, we demonstrated the gas-phase catalytic oxidation of a variety of toxic organic compounds and carbon monoxide, with very high rates of conversion to innocuous gases, primarily CO2 and H2O, at relatively low temperatures. In the proposed Phase II effort both process and materials will be further refined to optimize the utility of the catalytic technology with respect to solid waste management goals. The Phase II research and development will result in the design, assembly, rigorous testing, and delivery to NASA of a prototype system, sized to operate in conjunction with both the NASA developed heat melt compaction system and the URC developed microwave waste stabilization and water recovery system.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Ames Research Center (ARC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Ames Research Center(ARC)	Lead Organization	NASA Center	Moffett Field, California
UMPQUA Research Company	Supporting Organization	Industry	Myrtle Creek, Oregon

Primary U.S. Work Locations	
California	Oregon

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX06 Human Health, Life Support, and Habitation Systems
  - TX06.1 Environmental Control & Life Support Systems (ECLSS) and Habitation Systems
    - TX06.1.3 Waste Management